

**REMARKS**

Claims 160-200 are pending. Claims 167-200 have been withdrawn as directed to a non-elected species. Claims 160-166 stand rejected. Claim 160 is amended to include a recitation from claim 164. Claim 164 is cancelled. Claims 165 and 166 are amended to change dependency.

**Item 1**

Applicant notes that claims 160-166 were under examination and claims 167-200 are withdrawn. Upon entry of this amendment, claims 160-163 and 165-166 will be under examination.

**Item 2**

The Examiner has indicated that reference CA entitled "The Quantum Dot" was not considered. A supplemental IDS and a copy of the reference accompany this response. Review of the reference is respectfully requested.

**Items 3 and 4. Rejections under 35 U.S.C. §102(a)**

Claims 160-163 stand rejected as anticipated by Adams et al. (U.S. Patent No. 5,641,658). Office Action at page 3.

Adams is directed to: "The methods, articles of manufacture and devices [that] feature the amplification of a first nucleic acid without use of solution base primer pairs." Col. 3, ll. 23-25. This purpose is evidenced by the use of polymerase, which functions to amplify the nucleic acid. Col. 13, l. 56; and examples 1, 2 and 3.

By contrast, claim 160 as amended is directed to a method of storing information. Thus, the purposes and the means of achieving those purposes are entirely different. Thus, we request withdrawal of the rejection.

Moreover, claim 160 is amended to incorporate the recitation of claim 164. Adams et al. does not disclose heating the writable segments by passing electrical current through a metal

element arranged in or on the substrate. For this additional reason the rejection of claims 160-163 over Adams should be withdrawn.

Item 5. Anticipation by Heller et al. (U.S. Patent No. 6,017,696)

Claims 160-165 stand rejected under 35 U.S.C. 102(e) over Heller et al. Reliance on Heller et al. at col. 47, lines 20-35 as made in the Office Action concerning the statement, “the information in the sequences is defined by whether amplification occurs or not.” Office Action at page 5.

Claim 160 as amended incorporates the recitation of claim 164. Claim 164 stands rejected over Heller because “Heller teaches using electrical current through a metal element arranged in the substrate (see column 46, lines 65-67 and column 47, lines 1-3, where voltage is applied through the electrode on the chip to denature the sample which will heat the sample.)” Office Action at page 5.

In contrast, to the above interpretation, Heller discloses “Electronic Denaturation” (column 46, line 63), **not** heat denaturation. Nowhere does Heller disclose heat denaturation with metal elements in a substrate.

In further support of this view, Figure 17 illustrates and recites electronic denaturation, not heat denaturation.

The process of electronic denaturation is specifically disclosed at column 46, lines 65-66, wherein the electronic polarity is reversed and “voltage is applied to separate the two [DNA] strands.” Heller provides no indication of heat denaturation under these conditions.

Consequently, a case of anticipation has not been established because all the elements of the claim are not found in the prior art reference. The rejection should be withdrawn.

Moreover, heating of the sample is not inherent in the process described by Heller, as intimated in the Office Action. Inherency requires that the feature must necessarily and always be present. Heller effects denaturation electronically and there is no suggestion that denaturation

by heat necessarily and inevitably occurs under the conditions Heller describes. In particular, heat denaturation is known to require a threshold temperature (the melting temperature) but Heller does not suggest reaching a threshold temperature. Thus there is also no case of anticipation based on inherency.

For this additional reason claim 160 should be allowable over Heller et al.

Items 6-7. Rejection under 35 U.S.C. §103 over Heller et al.

Claim 166 is rejected as unpatentable over Heller et al. Office Action page 6. The Examiner states that Heller “does not specifically teach the use of 100 nanosecond pulses.” Office Action page 7. However, Heller teaches “the amount of voltage and the time period of application will be dependent on the length and base composition of the hybrid DNA complex (see column 46, line 66 to column 47, line 1).” *Id.* According to the Office Action one of ordinary skill in the art would routinely optimize the time for application of current.

Claim 166 depends from claim 160 as amended and incorporates all the recitations thereof. For the reasons presented above, Heller et al. does not disclose or render obvious all the elements of claim 160 as amended. For at least this reason, the rejection of claim 166 as obvious over Heller should be withdrawn.

Withdrawal of all rejections is respectfully requested.

Claims 167-200 will be amended to conform to claims 160-166 upon allowance of claims.

A request for a one-month extension of time accompanies this amendment and response.

A Supplemental Information Disclosure Statement is filed herewith.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicants have included fees for a one-month extension of time and an Information Disclosure Statement and believe no additional fees are due with this amendment. However, if any additional fees are due, please charge our Deposit Account No. 22-0185, under Order No. 20140-00288-US1 from which the undersigned is authorized to draw.

Dated: February 13, 2007

Respectfully submitted,

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